Name: _____ Date: _____

Section 2.1 Investigate

BLM 2–2

Investigate

How can you determine whether expressions are equivalent?
In grade 10, you studied three forms of the quadratic function: standard, vertex, and factored forms. To verify that these are different versions of the same function, use a table of values.

1. Complete the table of values for each quadratic function. Show your work. The first one is done for you.

x	$f(x) = x^2 - 6x - 16$	$g(x) = (x - 3)^2 - 25$	$h(x) = (x + 2)(x - 8)$
-4	$f(-4) = (-4)^2 - 6(-4) - 16$ $= 16 + 24 - 16$ $= 24$	$g(-4) = (-4 - 3)^2 - 25$ $= (-7)^2 - 25$ $= 24$	$h(-4) = (-4 + 2)(-4 - 8)$ $= (-2)(-12)$ $= 24$
-2			
0			
2			
4			

2. Reflect Compare the amount of work needed to complete each column in step 1. Which form was easier to calculate?

3. Expand the expressions on the right sides of the vertex form and the factored form to verify that they are equivalent to the right side of the standard form.

4. Reflect Compare the amount of work needed in steps 1 and 3. In which step does it seem there is less work needed to verify that the expressions on the right sides of the functions are equivalent?

5. Reflect What other method(s) exist that could be used to check if these expressions are different forms of the same function?

978-0-07-000985-1